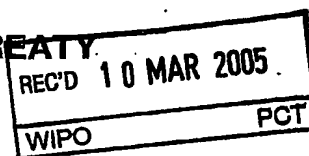


PATENT COOPERATION TREATY



PCT

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

12/5

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/016386

International filing date (day/month/year)
28.10.2004

Priority date (day/month/year)
31.10.2003

International Patent Classification (IPC) or both national classification and IPC
F02F7/00, F02F1/10

Applicant
TOYOTA JIDOSHA KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	7
	No: Claims	1-6,8-14
Inventive step (IS)	Yes: Claims	7
	No: Claims	1-6,8-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

- 1 The following document is referred to in this communication:
D1 : US 3 168 081 A (BAUER ALFRED F) 2 February 1965 (1965-02-02)
- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of the claims 1-6 and 8-14 is not new in the sense of Article 33(2) PCT.
 - 2.1 To claim 1: Document D1 shows a water-cooled engine (*column 1, line 14*), comprising a cylinder block (*24 + 26 + 28, mentioned in the text as "housing"*) having a cylinder bore (*within the barrels 12*); and a cylinder head (*44*) assembled to the cylinder block, the cylinder block being divided at the water jacket into a cylinder liner portion (*12*) and a cylinder outer wall portion (*28*), wherein the cylinder liner portion (*12*) has a wall defining the cylinder bore (*surrounded by liner portion 12*), and wherein the cylinder outer wall portion (*28*) surrounds the wall of the cylinder liner portion (*12*), thereby defining the water jacket between the cylinder outer wall portion (*28*) and the wall of the cylinder liner portion (*12*), and wherein the cylinder liner portion (*12*) includes an upper deck portion (*14*) integrally formed with the cylinder liner portion (*12*), the upper deck portion (*14*) contacting the cylinder head (*44*) assembled to the cylinder block (*24 + 26 + 28*), and wherein the cylinder outer wall portion (*28*) has a top surface (*upper side of flange 38*) that functions as a receiving surface, the receiving surface contacting and supporting the upper deck portion (*14*).

As document D1 contains all the features of the first claim, the subject-matter of the first claim is not new in the sense of Article 33(2) PCT.

 - 2.2 To the claims 2 to 6: Document D1 also shows
 - that the outer wall support portion supports a lower portion of the cylinder liner portion (figure 4 and 5), as claimed in claim 2,
 - that the outer wall support portion contacts a lower end of the cylinder liner portion (figure 4 and 5) as claimed in claim 3,
 - that, as claimed in claim 4, the support portion contacts the wall of the cylinder liner portion (figure 4 and 5),

- that the cylinder block includes a crankcase (24, 86, 86), like claimed in claim 5,
- the through hole (18) of claim 6.

In view of this, the subject-matter of the claims 2-6 is not new in the sense of Article 33(2) PCT.

2.3 To claim 8: Document D1 shows a cylinder block (24 + 26 + 28, *mentioned in the text as "housing"*) of a water-cooled engine (*column 1, line 14*), wherein the cylinder block has a cylinder bore (*within the barrels 12*) and a water jacket (*column 2, line 27*) about the cylinder bore and is assembled to a cylinder head (44) and in that the cylinder block is divided at the water jacket into a cylinder liner portion (12) and a cylinder outer wall portion (28), wherein the cylinder liner portion (12) has a wall defining the cylinder bore (*surrounded by liner portion 12*), and wherein the cylinder outer wall portion (28) surrounds the wall of the cylinder liner portion (12), thereby defining the water jacket between the cylinder outer wall portion (28) and the wall of the cylinder liner portion (12), and wherein the cylinder liner portion (12) includes a substantially planar upper deck portion (14) integrally formed with the cylinder liner portion (12), the upper deck portion (14) forming a top surface of the cylinder block, and wherein the cylinder outer wall portion (28) has a top surface (*upper side of flange 38*) that functions as a receiving surface, the receiving surface contacting and supporting the upper deck portion (14).

Because of the fact that document D1 contains all the features of claim 8, the subject-matter of claim 8 is not new in the sense of Article 33(2) PCT.

2.4 To the claims 9 to 14: Document D1 also shows

- that the outer wall support portion supports a lower portion of the cylinder liner portion (figure 4 and 5), as claimed in claim 9,
- that the outer wall support portion contacts a lower end of the cylinder liner portion (figure 4 and 5) as claimed in claim 10,
- that, as claimed in claim 11, the support portions contacts the wall of the cylinder liner portion (figure 4 and 5),
- that the cylinder block includes a crankcase (24, 86, 86), like claimed in claim 12,
- the through hole (18) of claim 13,
- and the bolt (42) of claim 14.

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In view of this, the subject-matter of the claims 9 to 14 is not new in the sense of Article 33(2) PCT.

Re Item VII.

- 1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.
- 2 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII.

The application does not meet the requirements of Article 6 PCT, because claims 3, 7, 8 and 10 are not clear.

- 1 To claims 3 and 10: In claim 2 (respectively 9) a "*....support portion supporting a lower portion of the cylinder liner portion*" is claimed. In claim 3 (respectively 10) "*...a support surface contacts and supports a lower end....*" As claim 3 depends on claim 2 (respectively 10 on 9), the reader expects in claim 3 (respectively 10) subject-matter that builds up on the subject-matter of claim 2 (respectively 9). But in this case, the only difference between the claims 2 and 3 (respectively 9 and 10) seems to be the difference between "*...a lower end...*" and "*...a lower portion...*". This difference is too vague and unclear and leaves the reader in doubt as to the geometry of the lower end / lower portion, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT.
- 2 To claim 7: This claim depends on claim 1. In claim 1 the cylinder outer wall portion has a top surface that functions as a receiving surface that supports the upper deck portion. This means, that the upper deck portion is situated between

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the cylinder outer wall portion (the cylinder block) and the cylinder head.

In claim 7 the cylinder block is assembled to the cylinder head.

Thus, the subject-matters of claim 1 and claim 7 are contradictory to each other as in claim 1 the upper deck portion is situated between the cylinder outer wall (the cylinder block) and the cylinder head and as in claim 7 the cylinder head directly contacts the cylinder outer wall portion (the cylinder block). This contradiction results in lack of clarity (Article 6 PCT).

- 3 To the claims 1 and 8: Although these claims 1 and 8 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.